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Original Article

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Association between Body Mass Index and Gastric Cancer Risk According to Effect Modification by Helicobacter pylori Infection

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Purpose

Few studies investigated roles of body mass index (BMI) on gastric cancer (GC) risk according to Helicobacter pylori infection status. This study was conducted to evaluate associations between BMI and GC risk with consideration of H. pylori infection information.

Materials and Methods

We performed a case-cohort study (n=2,458) that consists of a subcohort (n=2,193 including 67 GC incident cases) randomly selected from the Korean Multicenter Cancer Cohort (KMCC) and 265 incident GC cases outside of the subcohort. H. pylori infection was assessed using an immunoblot assay. GC risk according to BMI was evaluated by calculating hazard ratios (HRs) and their 95% confidence intervals (95% CIs) using weighted Cox hazard regression model.

Results

Increased GC risk in lower BMI group (< 23 kg/m^2) with marginal significance (HR, 1.32; 95% CI, 0.98 to 1.77) compared to the reference group (BMI of 23-24.9 kg/m^2) was observed. In the H. pylori non-infection, both lower (< 23 kg/m^2) and higher BMI (! 25 kg/m^2) showed non-significantly increased GC risk (HR, 10.82; 95% CI, 1.25 to 93.60 and HR, 11.33; 95% CI, 1.13 to 113.66, respectively). However, these U-shaped associations between BMI and GC risk were not observed in the group who had ever been infected by H. pylori.

Conclusion

This study suggests the U-shaped associations between BMI and GC risk, especially in subjects who had never been infected by H. pylori.

Key words

Stomach neoplasms, Body mass index, Helicobacter pylori, Cohort studies, Case-cohort, Effect modification

ern populations showed positive association between high body mass index (BMI) and gastric cardia cancer inc